



The Tidal Exchange

Newsletter of the New York ~ New Jersey Harbor Estuary Program

Autumn 2007

THIS ISSUE

HARBOR ESTUARY NEWS CONTENTS

1

CARP Completes
Modeling of Contaminants!
Next Phase of Toxics Work to Begin
Dennis Suszkowski, Ph.D.

2

Arlington Marsh
HEP Acquisition Site AK7

6

Continuous Dissolved Oxygen
Monitoring Begun by PVSC
By Ashley Pengitore, Passaic
Valley Sewerage Commissioners.

7

From Landfill to Land Access
*Settlement between the
City of Linden and NJDEP
Establishes the former
Linden Landfill as a Greenway*
by Martin McHugh and
Kerry Kirk Pflugh, NJDEP

8

Prall's Island/Asian
Longhorned Beetles
By Andrew Bernick,
Ph.D., AKRF, Inc

CARP Completes Modeling of Contaminants!

Next Phase of Toxics Work to Begin

Dennis Suszkowski, Ph.D.

After years of hard work involving the efforts of many agencies, organizations and individuals, the final reports of the modeling carried out under the Contamination Assessment and Reduction Project (CARP) are now complete and available to the public. The region now has scientifically credible tools to evaluate the relative significance of the sources of the most problematic contaminants affecting levels of these contaminants in water, sediment and biota of the entire estuary. The modeling demonstrates

the dynamic nature of the harbor system and the continuing influence that legacy contamination is having on all parts of the ecosystem. This article is the first of two about CARP for the Tidal Exchange, and reports on the background of the project and provides information about how to obtain several of the modeling reports and products. The next article will focus on a discussion of important results and next steps in seeking ways to reduce harbor pollution.

In the early 1990's a major dredging crisis emerged in New York

(continued on page 4)



The TOPS apparatus shown here was used to collect some of the water samples. This device samples large volumes of water and enables scientists to detect chemicals at very low levels. Photo courtesy of Simon Litten, NYSDEC



New York – New Jersey
Harbor Estuary Program

Director
Robert Nyman
US EPA, Region II

The Tidal Exchange – Autumn 2007

Editors
Jeff Myers, NYS DEC
Kerry Kirk Pflugh, NJ DEP
Robert Nyman, EPA HEP Office

The Tidal Exchange is a publication of the New York – New Jersey Harbor Estuary Program (HEP), a partnership of federal, state and local governments, scientists and citizens working together to protect and restore the natural resources of the estuary. The purpose of the newsletter is to promote an informative dialog on issues related to the Harbor Estuary Program.

The HEP is sponsored by the States of New York and New Jersey and the US Environmental Protection Agency. The HEP Management Committee consists of representatives from the US EPA, NJ DEP, NYS DEC, NY and NJ local governments, US ACE, US DOI, NOAA, Port Authority of NY & NJ, Interstate Environmental Commission, NJ Harbor Dischargers Group, NYS DOS, Science & Technical Advisory Committee and Citizens Advisory Committee.

The Tidal Exchange is produced and printed by New York Sea Grant (NYSG) under a cooperative agreement with the US EPA (#CE982247-02). The viewpoints expressed here do not necessarily represent those of NYSG, US EPA or the HEP Management Committee, nor does mention of trade names, commercial products or causes constitute endorsement or recommendation for use.

Arlington Marsh

HEP Acquisition Site AK7

Adapted from “An islanded Nature: Natural Area Conservation and Restoration in Western Staten Island, including the Harbor Herons Region” by Peter P. Blanchard III and Paul Kerlinger, published by The Trust for Public Land and the NYC Audubon Society. Used with permission.

Size, ecological importance, restoration potential, contiguity with existing parkland, and a high degree of development threat are all characteristics that place Arlington Marsh at the highest level of priority for conservation. Arlington Marsh is the largest remaining, intact salt marsh on the Kill van Kull in Staten Island. Despite development at its southern boundary, a DOT facility on the landward end of its eastern peninsula, and a marina on its eastern flank, Arlington Marsh provides more habitat, and in greater variety, for flora and fauna than it might initially appear.

Arlington Marsh’s importance within the fabric of remaining open space in northwestern and western Staten Island continues to be recognized. In *Significant Habitats and Habitat Complexes of the New York Bright Watershed* (1998), the U. S. Fish & Wildlife Service identified Arlington Marsh as “one of the main foraging areas for birds of the Harbor Herons complex.” In September 1999, the site was recommended as a high priority of acquisition by the NY/NJ HEP Acquisition and Restoration Sub workgroup. The Regional Advisory Committee for the New York Open Space Plan (2000) has listed Arlington Marsh as a “government property with potential for transfer to public recreational use.” According to the Sweetbay Magnolia Biosphere Reserve Conservancy, the most important feature of this site is that it serves as “a green corridor for wildlife moving from the Goethals

Map of the New York-New Jersey Harbor Estuary





Arlington Marsh is located on the northwest shore of Staten Island, above and to the right of Howland Hook Container terminal in this picture. Mariners Marsh is already protected and is visible below and across the street from Arlington Marsh. Google Earthimage supplied by Regional Plan Association.

Bridge Pond to Mariners Marsh and the north coast of Staten Island.” The Mariners Marsh Conservancy, a local non-profit environmental organization that manages Mariners Marsh for NYCDPR, recognizes that Arlington Marsh, in addition to its significant natural habitat, serves as “the last natural area on the North Shore through which the public can gain access to waterfront” (letter to Mayor Rudolph W. Giuliani, January 17, 1999). From a bird’s-eye view and from an overview of the entire region covered by *An Islanded Nature*, Arlington Marsh may, in fact, be seen as the northern anchor of a system of interdependent natural and regenerating landscapes.

Arlington Marsh contains a variety of habitat types including high marsh, salt marsh, intertidal marsh, *Phragmites* marsh, mudflats, and uplands along Richmond Terrace. The site’s shoreline consists of two peninsulas and a central cove. From an ecological perspective, Arlington Marsh is essentially the northern extension of Mariners Marsh to the Arthur Kill. Ancient hydrological and habitat connections between the two sites also persist, despite the presence of Richmond Terrace, which was

constructed only recently (in the time frame of marsh establishment of Staten Island), defining the southern boundary of Arlington Marsh. A hydrological link between Arlington Marsh and Mariners Marsh is provided by tidally influenced Newton’s Creek (formerly Bowman’s Brook), which originates in Mariners Marsh and, having passed under Richmond Terrace, enters the southeast corner of Arlington Marsh on its way to the Arthur Kill. Since the *Harbor Herons Report* (1990), which treated the two sites as one unity, Mariners Marsh has achieved full recognition and protection through its designation in 1997 as a New York City Park. Arlington Marsh, however, continues to languish, its habitat qualities praised but its status as a natural area very much at risk.

Hérons, egrets, and ibis, arriving from Shooters Island, Prall’s Island, Isle of Meadows, and other New York/New Jersey Harbor islands, feed in Arlington Marsh’s shallows and mud flats in the warmer months. It should be noted that, in contrast to Shooters Island, Prall’s Island, Isle of Meadows, and other New York/New Jersey Harbor islands, which afford to nesting wading birds a high degree of security

from predators and disturbance, Staten Island’s mainland marshes (including Arlington Marsh) cannot provide this level of protection. Therefore, herons, egrets, and ibis feed but do not nest in Arlington Marsh’s shallows and mud flats. The Red-winged Blackbird and the diminutive Marsh Wren do make their nests at safe elevations in the Arlington Marsh vegetation and, according to Dr. Katherine Parsons based on ongoing ornithological observations in the New York Harbor initiated in 1992 under the Wetlands Watchers Program (the Manomet Center for Conservation Sciences), “Thousands of waterbirds of 48 species utilize this site. Species observed at the site include state-designated-Endangered and Threatened species Least Tern, Common Tern, Northern Harrier, and Osprey. In addition, state-designated special concern species Snowy Egret, Great Egret, Little Blue Heron, Glossy Ibis, Yellow-crowned Night Heron, Tricolored Heron, Laughing Gull, Black Skimmer, Ruddy Duck, and Boat-tailed Grackle have been observed at Arlington Marsh. The site is especially critical to nearby populations of breeding herons, egrets, and ibises” (Dr. Katherine Parsons, letter dated March 1, 2000).

The value of Arlington Marsh and of other coastal marshes to marine life cannot be overestimated. The waters here are contiguous with Newark Bay and share elements of marine fauna with the bay. Furthermore, faunas of the bay and of the Arthur Kill are linked through food chains and nutrient exchange. For numerous marine invertebrate and vertebrate animals, the offshore waters, shallows, mud flats, intertidal marshes, and tidal creeks offer a wealth of habitat for feeding, reproduction, and escape from predators. Fiddler crabs, blue crabs, ribbed mussels, killifish, and silversides all inhabit the Arlington marsh which provides them with a naturally protected ecosystem, allowing them to both flourish and in turn be eaten by their natural predators.

The role of salt marshes in nurturing marine life in various stages of development is well known. The marine life harbored in salt marshes

(continued on page 5)

CARP Completes Modeling of Contaminants

(from page 1)

Harbor. Under revised testing protocols, dredged materials throughout the harbor were be found to have problematic levels of contaminants, particularly PCBs and dioxins, making it virtually impossible for these sediments to be placed at an offshore disposal site. This contamination has led to both economic and environmental hardships. Dredging activities were dramatically curtailed as dredging managers and regulators struggled to find new management options for handling contaminated dredged material. While dredging has since proceeded, the disposal costs have escalated between 10 and 30 times pre-crisis levels. Other hardships continue to plague the system, including fish advisories and substandard water quality, which are impeding the recovery and utilization of many of the estuary's natural resources.

One obvious, but long-term, solution to the dredging crises was to reduce or eliminate the sources of the contaminants that wind up in sediments of shipping channels that periodically need to be dredged. Working through a U.S. Environmental Protection Agency (EPA) initiative called the Dredged Material Forum and the NY/NJ Harbor Estuary Program, a special workgroup developed recommendations for a program that would achieve that goal. In particular, the workgroup was given the task of formulating a plan that would address the following management concerns.

- Which sources of contaminants need to be reduced or eliminated to render future dredged material clean?
- Which actions can yield the greatest benefits?
- Which actions are necessary to achieve the future targets recommended in the region's Dredged Material Management Plan?

Through financial support from the 1996 Bi-State Dredging Agreement and the contributions of several federal, state, regional and private organizations, the Contamination Assessment and Reduction Project was launched to

address these questions.

Key objectives of the CARP are to:

- Identify and quantify sources of contaminants of concern to the NY/NJ Harbor Estuary from a dredged material standpoint
- Establish baseline levels of contaminants of concern in water, sediments, and fish tissue
- Forecast future conditions in light of various contaminant reduction scenarios
- Take action to reduce levels of contaminants of concern in water, sediments, and fish tissue

New York State Department of Environmental Conservation (NYSDEC) and New Jersey Department of Environmental Protection (NJDEP) completed the first two objectives through a comprehensive data collection (sampling and testing) program, which represents about 90% of the \$32 million total funding for CARP. Mathematical models were then developed to integrate the data in a mass balance framework such that relationships between loadings and contaminant concentrations in water, sediment and biota can be evaluated and quantified. Moreover, these models provide a predictive capacity that managers and scientists need to assess the consequences of existing contaminant loads and potential remedial actions. The modeling work has been successfully performed by HydroQual, Inc. and addresses the third objective.

CARP participants hope that its work will lead to action to reduce both ongoing and historic contamination. Since the inception of CARP, agencies on the CARP Management Committee have made comments and recommendations to make CARP as relevant as possible to the various regulatory programs that are in place to address contaminant issues. CARP products, particularly the modeling results, will no doubt provide important new information for these programs to consider, but further data collection and model refinement may be necessary to suit the scale and requirements of any particular program.

Given the vast complexities of the entire estuary and the processes that affect contaminant fate and transport, modeling of this system was a great technical challenge. To ensure that the model components would be *state-of-the-science* upon completion, a Model Evaluation Group (MEG) was established at the outset of the project. Experts in organic and inorganic geochemistry, hydrodynamics, sediment transport and contaminant modeling were solicited to be members of the MEG. The MEG has generally found that the CARP modeling effort has advanced the understanding of contaminant behavior in the estuary and does a very credible job of characterizing the relationships between contaminant loadings and concentrations in the environment.

One of the more challenging issues that the CARP Management Committee addressed was the development of realistic contaminant reduction scenarios to use as an illustration of the model's capability. As the modeling activities progressed, it became increasingly clear that legacy contamination of sediments was a dominant feature in controlling levels of contaminants in the system. Since two large-scale sediment remediation projects (namely the Hudson River Superfund and Lower Passaic River Superfund projects) were being developed, it made sense to include these projects in our initial CARP scenario analyses. While neither project is fully defined as yet, the model scenario gives a glimpse of the potential for these sites (remediated or not) to influence sediment and water quality in the Harbor over the long term. And in particular, how these actions would likely improve sediment quality in relationship to the current bioaccumulation guidelines used to determine the suitability of dredged material for use as remediation material at the Historic Area Remediation Site (HARS).

It has been the desire of the CARP Management Committee that modeling products not only be used as management tools, but as research tools from which a fuller understanding of the fate and transport of contaminants can be gleaned. In addition, it is

hoped that models developed under CARP will serve as a foundation from which more advanced models can be developed and applied to new and emerging management issues. In this regard, the modeling reports, CARP data, and the CARP models themselves are being made publicly available through the CARP website (www.carpweb.org). Anyone interested in obtaining copies of products or desiring further information about CARP should consult the website.

In addition, a technical conference to present and discuss the modeling results is scheduled for November 29, 2007 at the Customs House in lower Manhattan. So be sure to mark your calendars! ❖

Dennis Suszkowski is the Science Director for the Hudson River Foundation and the co-chair of both the CARP Management Committee and the HEP Science and Technical Advisory Committee.

Arlington Marsh (from page 3)

and adjacent waters, in turn, sustains additional marine life, birds, and commercial and recreational fisheries, and contributes to the overall health and productivity of the New York/New Jersey Harbor Estuary. As alternative plans are drawn up for this site, it must be remembered that the largest remaining salt marsh of Staten Island's North Shore is an important and functioning part of a broader natural system.

Update on the current legal status of Arlington Marsh by Rob Pirani, Co-Chair of NYC's Wetlands Transfer Task Force and Director of Environmental Programs at Regional Plan Association:

The future of Arlington Marsh is now being considered by the Wetlands Transfer Task Force established by Mayor Michael R. Bloomberg and the New York City Council. The Task Force has been working for the past two years to evaluate the feasibility

of transferring available City-owned wetlands—like Arlington Marsh—to the jurisdiction of New York City Department of Parks & Recreation (DPR). The Task Force has identified over 1000 such city owned “surplus” properties totaling about 700 acres that might be eligible for transfer to DPR.

The Task Force's recommendations for the future of the three City-owned properties in Arlington Marsh are being made in consideration of the current and future improvements at the adjacent Howland Hook container port. At the urging of Deputy Mayor Doctoroff and Councilpersons McMahon and Gennero, the Economic Development Corporation (EDC) is now examining future demand for port services at Howland Hook. The EDC report will help inform the members of the Task Force as they prepare the final draft Task Report this fall. To get the draft report when it is released, or for other information about the Task Force, please visit www.nyc.gov/parks; keyword wetlands. ❖

Monitoring to Support Evaluation of the NY Bight

New ocean water quality monitoring is being planned by EPA for the New York Bight to support the near term refinement of the System Wide Eutrophication Model (SWEM) for the Bight and to provide long term monitoring of the New Jersey coast where low dissolved oxygen conditions have been shown to exist. While there are indications that low dissolved oxygen conditions may be a widespread issue in the Bight, additional information is needed to clarify this.

Historically, low dissolved oxygen conditions in the New York-New Jersey Harbor have been attributed to nutrient enrichment. HEP has endeavored to address this in a system-wide approach that considers pollutant loadings and hydrodynamics of the Harbor, Long Island Sound, and New York Bight utilizing SWEM. While SWEM has been reviewed and approved by an expert panel for use in the core harbor

area for which it was designed, there are questions as to whether adequate data existed to utilize the model for the Bight. To address this issue, additional data will be collected and incorporated into a further calibration of the model. Monitoring for the initial SWEM calibration was conducted by the City of New York in 1994 and 1995.

To get the effort started, EPA conducted an initial screening survey in a portion of the Bight in July 2007 using the coastal monitoring vessel, Kenneth Biglane. This survey was conducted to test the methods and procedures being developed to establish the long-term monitoring program. Monitoring included water quality profiling using in situ instrumentation and collection of water samples for analyses. The water quality profiling was performed by lowering a probe through the entire depth to record the following parameters: temperature, conductivity, salinity, dissolved oxygen, pH, and

turbidity. Water analyses included the following nutrients: nitrate-nitrite, ammonia, and total phosphorous. Future surveys will include use of the Ocean Survey Vessel Bold.

Stay tuned for future updates on this program. ❖

Public Access Event Days

HEP has selected 16 projects to support that will promote public access through events such as free kayaking, nature walks and festivals on the waterfront. Events will occur throughout the estuary in such places as the Harlem River and Jamaica Bay in New York and the Passaic River and Hoboken in New Jersey. More information about the events will be made available on the HEP website soon. ❖

Continuous Dissolved Oxygen Monitoring Begun by PVSC

By Ashley Pengitore, Passaic Valley Sewerage Commissioners.

In July 2007, the Passaic Valley Sewerage Commissioners (PVSC) added a new component to their water quality monitoring efforts in the NY/NJ Harbor. Two environmental monitoring moorings have been deployed to capture measurements of low dissolved oxygen (DO) in sensitive areas of the estuary; one in Newark Bay near Kearny Point, and the other in New York Harbor near the Bayonne Military Ocean Terminal. The moorings are equipped with water quality sondes that are set to measure

DO, temperature, and salinity at about one meter from the bottom, in 1-hour intervals, for a period of 3 months.

There is an ongoing effort by the US Environmental Protection Agency (EPA) and the States of New York (NYSDEC) and New Jersey (NJDEP), to develop Total Maximum Daily Loads (TMDLs) for the NY/NJ Harbor under the auspices of the NY/NJ Harbor Estuary Program (HEP). The System Wide Eutrophication Model (SWEM), developed by HydroQual, is being utilized by HEP to develop

TMDLs for nutrients.

SWEM outputs have shown calculations of low DO in deep water areas in the late night/early morning hours. Data collected by PVSC's monitoring sondes will capture overnight DO measurements in the summer months, when DO is typically lowest. This data set could be used to confirm that SWEM modeling outputs are accurate for TMDL development in the Harbor. ❖

Ashley Pengitore is the chief field scientist for PVSC and is in charge of coordinating the Long-Term Water Quality Monitoring Program in the NJ portion of the NY/NJ Harbor for the New Jersey Harbor Dischargers Group



Deploying a data collection array in Newark Bay

From Landfill to Land Access

Settlement between the City of Linden and NJDEP Establishes the former Linden Landfill as a Greenway

by Martin McHugh and Kerry Kirk Pflugh, NJDEP

The establishment of a Linden Greenway at the former Linden Landfill site was announced by New Jersey Department of Environmental Protection Commissioner Lisa Jackson during Earth Week. This Greenway is being made possible by an agreement reached between NJDEP and the City of Linden. The agreement will address any remaining environmental problems at the Linden Landfill and permanently set aside the 55 acre site as a preserve, plus an additional 50 acres of adjacent wetlands and more than 40 acres known as the Hawk Rise Wildlife Area. The site will eventually provide area residents with open space and access to the Rahway River. The agreement, an Administrative Consent Order (ACO) will finalize plans for the closure and clean up of one of the last remaining municipal landfills and establish a much needed urban greenway.

Now, as a result of the City's settlement of past violations at the landfill and its commitment to complete its closure, the Linden Landfill will take on a new public function that capitalizes on its location in the "swamp." In accordance with the ACO, the landfill will be transformed into the Linden City Greenway. The agreement to create the new greenway represents a culmination of the longstanding efforts of local environmentalists and community activists. Groups like New Jersey Concern have been working with members of the Linden City Council and local industry to bring attention to the natural resources surrounding the landfill and start the process of preservation. The new greenway will provide public access to the unique and rich mix of forested, wetland and wildlife resources that exist to this day on this part of the river. While the river remains vital to commerce, this settlement recognizes its importance in supporting wildlife, providing drinking water, and satisfying the recreational needs of area residents.

In recent years, the city made significant progress toward closing the landfill by installing a containment wall and systems to control leachate and storm water. This ACO requires the city to finish properly closing the landfill and to enhance 50 acres of surrounding forest and wetlands so that a Linden City Greenway can be established. NJDEP will also arrange for an additional 10 acres of land (adjacent to the landfill) associated with the Merck natural resources damages settlement to be part of the Greenway.

The landfill provided an important public function in the development of the regional economy when it began accepting municipal waste 50 years ago. It was one of the last of the old municipal landfills to close when it ceased operations on Jan. 1, 2000. The history of the 55 acre landfill is typical of municipal landfills that began operating in that time period. Linden traces its own historical roots back to 1861 when it was inaugurated as a township. Linden grew into a city in an area that has had a tremendous role in New Jersey's commerce since the industrial revolution. As the city expanded, the landfill began in a place similar to most landfills – it was established in the community's "swamp." Its location along the Rahway River was a crossroads of rail and river commercial routes in what remains one the most highly industrialized and densely populated parts of the state.

The entire Rahway River watershed has been undergoing its own transformation in recent years. Thanks to the commitment of environmental groups and local government and the comprehensive programs of NJDEP and USEPA, the river is recovering and provides fisheries and wildlife habitat, drinking water and public enjoyment for anglers, boaters and those who stroll its historic banks. The establishment of the greenway will provide new access to resources for

communities that have long suffered from the impacts of industrialization and commerce. The greenway and the natural resource interpretive programs required through this ACO will also serve as the lynchpin for a network or "green infrastructure" that links preserved/restored open spaces with committed stewardship organizations to maintain access and further progress for natural resources can found up and down the entire Rahway River. ❖

Martin McHugh is the Special Assistant to the Assistant Commissioner for Compliance and Enforcement at NJDEP.

Kerry Kirk Pflugh is the Manager of the NJDEP Office of Communication, Planning and Outreach and is a HEP Management Committee member



Laura Bartovics conducting an interview during Estuary Live 2006.

Bartovics to Become a NYC Teacher!

Laura Bartovics has been well known to most of you as the enthusiastic Education and Outreach Coordinator for HEP. For the past seven years, she has helped the program in numerous ways, both small and large. Among her greatest accomplishments were the two Estuary Live productions at Liberty State Park and at Jamaica Bay. Earlier this year, Laura decided to pursue her passion for teaching by enrolling in a program to earn a teaching degree and to begin teaching at a local NYC school. We all wish her well in her new career. ❖

Prall's Island/Asian Longhorned Beetles

By Andrew Bernick, Ph.D., AKRF, Inc

Prall's Island is an 88-acre island located within the Arthur Kill, a narrow estuary that separates western Staten Island and New Jersey. In 1978, several species of wading birds (i.e., herons, egrets, and ibis), often referred to as the 'Harbor Herons', were found nesting on Prall's Island. Along with nearby Shooter's Island and Isle of Meadows, Prall's became a core nesting colony for wading birds, and has been monitored by NYC Audubon since 1985 through a management agreement with the NYC Department of Parks and Recreation (NYCDPR). All three of these islands experienced serious nesting declines over the past decade. Since 2002, Prall's Island has been the only colony in western Staten Island where wading birds have nested, albeit in low numbers.

In early March 2007, researchers from the United States Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS) detected Asian Longhorned Beetles (ALBs) in over 40 gray birches and several red maples on Prall's Island. ALBs are native to China, and were first observed in NYC in 1998. They use trees for egg-laying and development, and are found in a variety of native tree species in the NY-NJ Harbor area.

If ALBs were to establish an expanding population in the United States, major ecological and economic damage to woodlands and agricultural trees could ensue. In response to ALB presence on Prall's Island, the NY-NJ ALB Cooperative Eradication Program (involving USDA-APHIS, New York State's Department of Environmental Conservation, and NYCDPR) cut and chipped ~3,000 potential host trees on Prall's Island in March/April 2007. Additional mainland surveys identified ALBs in a silver maple at nearby Old Place and Saw Mill Creek, where ~8,000 potential host trees have been removed since June 2007. These removals are examples of the standard ALB management approach, where all potential ALB host trees are cut within a 0.5 mile area surrounding "infested" trees.

One resulting conservation concern is the loss of wading bird nesting habitat in NY-NJ Harbor. Wading birds require trees for nest-building and nest material; unfortunately, the list of preferred nesting trees overlaps widely with preferred ALB host trees. For instance, gray birch has been an important tree species for nesting wading birds on Prall's Island and other colonies, and their removal greatly reduces the chance that wading birds will nest there in the near future. If ALBs are discovered on other nesting islands, the present management strategy could have serious impacts on wading bird breeding populations in NY/NJ Harbor.

Various organizations, including the NY-NJ Harbor Estuary Program's Harbor Herons Subcommittee, are working closely with the management team to develop sensible plans for habitat restoration and preventative management strategies to reduce impacts on nesting wading birds at island-colonies where ALBs have not been identified. ❖

Dr. Andrew Bernick, an ecologist with AKRF, Inc., has lead nesting surveys for NYC Audubon's Harbor Herons Project since 2005. His dissertation research focused on Black-crowned Night-Heron foraging ecology in NY/NJ Harbor.



The center of Prall's island facing southeast. Field workers participating in a wading bird nesting survey and habitat assessment for NYC Audubon's Harbor Herons Project in May of 2007.

Would you like to change your address or add someone to our mailing list?

Provide changes or additions below, cut out or copy this section (include mailing label to the right so we can find you in our records) and mail to the Harbor Estuary Program Office, 290 Broadway, 24th Floor, New York, NY, 10007.



New York - New Jersey
Harbor Estuary Program

290 Broadway, 24th Floor
New York, New York 10007

First-Class Mail
Postage & Fees Paid
EPA
Permit No. G-35

www.harborestuary.org